

## **Appendix G**

### **Field Assessment**

## Appendix G, Field Assessment Table of Contents

<b>1.0</b>	<b>General Information .....</b>	<b>1</b>
1.1	Purpose .....	1
1.2	Scope .....	1
1.3	Objectives .....	1
1.4	Frequency .....	2
1.5	Assessor Qualifications .....	2
1.5.1	Standards of Ethical Conduct .....	2
<b>2.0</b>	<b>Conducting Field Assessments .....</b>	<b>3</b>
2.1	Preparation .....	3
2.1.3	Safety Considerations .....	3
2.3	Team Assignments .....	3
2.4	On-Site Protocol .....	4
2.4.1	Orientation Tour .....	4
2.4.2	Assessment .....	4
2.4.3	Feedback .....	4
2.5	Documentation .....	4
2.5.1	Files .....	5
2.5.2	Notebooks .....	5
2.6	Report .....	5
2.6.1	Deficiencies .....	5
2.6.2	Observations .....	5
2.7	Report Issuance .....	6
2.8	Action Resulting from the Assessment Report .....	6

## Attachments and Enclosures

Field Assessment General Information	Attachment 1
General Procedures Checklist .....	Enclosure 1
Groundwater Sampling Checklist .....	Enclosure 2
Soil & Sediment Sampling Checklist .....	Enclosure 3
Surface Water Sampling Checklist .....	Enclosure 4
Waste Sampling Checklist .....	Enclosure 5
Storm Water Sampling Checklist .....	Enclosure 6
Air Sampling Checklist .....	Enclosure 7
Potable Water Sampling Checklist .....	Enclosure 8

## **1.0 General Information**

### **1.1 Purpose**

The purpose of this appendix is to provide information and guidance on conducting field assessments in support of the Navy's Installation Restoration (IR) Program. In this regard, it should be noted that the direction given in this section is typically presented using the term “should.”

Field assessments are conducted to promote data quality and foster continuous improvement in the systems that support data collection. Contractors should perform routine field assessment as part of their internal quality assurance (QA) system. EFDs/EFAs may need to perform assessments beyond those performed by the Contractor. Such assessments shall be performed at the discretion of the EFD/EFA. The EFD/EFA shall determine if the information and guidance presented in this section shall be applied more stringently (i.e., “should” implemented as “shall”).

### **1.2 Scope**

All field assessments should include an assessment of general issues, including:

- Training and qualifications of personnel
- Quality control (QC)
- Record keeping and documentation
- Contamination control
- Change control
- Sample compositing
- Sample preparation
- Preservation, storage
- Management and related issues

Checklists for various field sampling activities are provided as attachments to this appendix.

It is not within the scope of a field assessment to address the scientific validity of sampling techniques, sampling and analytical design considerations, or health and safety issues. However, assessors may identify and report issues of concern in these areas that merit the attention of project or Navy management.

### **1.3 Objectives**

Field assessments use on-site observations, interviews, and reviews of documentation and records to:

- Determine if sampling procedures, QC practices, and use of field equipment are being performed in an acceptable manner and in accordance with project and Navy requirements<sup>1</sup>
- Determine if project documentation is accurate, complete, and in compliance with project and Navy requirements
- Determine if quality systems are effectively implemented to identify, resolve, and prevent field problems
- Verify the identity and qualifications of field operations personnel
- Provide objective evidence on the effectiveness of field operations and the representativeness of samples

## **1.4 Frequency**

The frequency and duration of field assessments should be determined by the project technical team to ensure quality work and attainment of DQOs. The number of site assessments and level of scrutiny will depend on the nature, length and complexity of the project, as well as past performance of the sampling team and the intended use of the data. Assessments of field sampling activities should be carried out on both an announced and unannounced basis. Assessments should be a priority during the first stages of a field sampling event and during sampling of critical locations or sample media.

An independent assessment of each contractor's media-specific sampling operations should be conducted each year. Each contractor's internal QA program should require internal assessments of all major types of sampling operations on a frequency not less than annually.

## **1.5 Assessor Qualifications**

Assessors should possess technically appropriate educational credentials and environmental field experience that are commensurate with their responsibilities for conducting field assessments. The EFD/EFA will determine the appropriate field assessor qualifications. Qualifications should be forwarded to the EFD/EFA prior to beginning the field assessment.

### **1.5.1 Standards of Ethical Conduct**

Each assessor should be familiar with standards of ethical conduct and submit a signed statement declaring freedom from conflict of interest as detailed in Appendix A, Standards of Ethical Conduct.

---

<sup>1</sup> The Navy has specified minimum field sampling requirements in the latest version of OPNAVINST 5090.1B, CH-1, Chapter 25. These requirements shall be considered when assessing project planning documents and proposed field operations. Appendix E details field sampling requirements presented in Chapter 25.

## 2.0 Conducting Field Assessments

### 2.1 Preparation

As appropriate to the scope of the field assessment, the lead assessor should request advance copies of selected materials for review to familiarize the assessors with the relevant procedures and to prepare the assessors for interviews of project personnel. Documents reviewed should include, but are not limited to:

- Project planning documents (i.e., the approved sampling and analysis plan (SAP))
- Selected implementing procedures (at a minimum, one each of the following types of implementing procedures should be reviewed; sampling technique (one for each media sampled); data assessment (one for each major class of analysis subject to assessment); data management; field QC; custody control))
- Supporting information (e.g., a map to the field sampling locations, access instructions for assessment personnel, a current project organization chart, and a site-specific health and safety plan)

In addition to reviewing documents, the assessors should select and familiarize themselves with the checklists they will be using.

The assessment team will review these materials prior to the on-site assessment as a means of familiarizing themselves with the project, preparing for the assessment, and ensuring that the scope of the assessment is appropriately established to maximize the use of on-site time.

#### 2.1.3 Safety Considerations

On-site assessments may require that assessors enter areas with known or potential hazards. Assessors are encouraged and expected to decline participation in activities which, based on their professional judgment and experience, present an unreasonable risk to their health or safety.

Assessors are required to comply with all applicable site-specific safety requirements, as defined by site management.

As experienced environmental professionals, assessors are expected to behave in a safe and responsible manner. At a minimum, assessors should wear whatever level of personal protective equipment appropriate for the site (including, but not limited to, wearing gloves when touching samples and using safety glasses and boots).

### 2.3 Team Assignments

The lead assessor should assign individual assessors areas of the review. All field assessors should assess procedures and practices for:

- Selection and documentation of sampling locations
- Execution and documentation of sampling activities (including compositing, preparation, preservation, storage, and handling)

- Custody control
- Collection of representative samples
- Use of equipment and containers (including cleaning and storage)
- Contamination prevention and control
- Adherence to the QA program and QC (including; collection and use of field QC samples)
- Training and qualification of field operations personnel
- Accuracy, completeness, and procedural compliance of documentation and records (including, field logbooks, well development records, equipment calibration checks, and sample management records).

## **2.4 On-Site Protocol**

### **2.4.1 Orientation Tour**

Upon arrival at the site, the assessment team should meet with the site supervisor to review the intended work schedule, and identify which personnel and operations should be involved in the assessment. In most cases, the on-site assessment should begin with a brief tour of the field area to provide the assessment team with a general orientation to the area subject to review and to introduce the assessors to the field operations staff.

### **2.4.2 Assessment**

Assessors interview field personnel and observe field operations first hand to assess whether project documentation meets evidentiary requirements and provides a complete and accurate record that allows for after the fact reconstruction of field activities. The approved SAP, along with the appropriate field assessment checklists, should be used as the basis for conducting the field assessment.

The on-site assessment should assess and procedures and practices for the areas identified in Section 2.3.

### **2.4.3 Feedback**

Feedback and corrective action, if appropriate, are the desired outcomes of the field assessment. For immediate correction of a problem, verbal feedback is acceptable followed by documentation in the field assessment report. Feedback should be provided in written form to the agency responsible for conducting the sampling effort.

## **2.5 Documentation**

The documents and records which are generated, compiled, or reviewed during the assessment process (e.g., checklists, corrective action) should be managed and maintained in the QA program files. These files are Navy property, and should be provided to the cognizant organization on request.

### **2.5.1 Files**

For each assessment, the lead assessor should establish and maintain files for the correspondence, records, documents, copies, and supporting information that is generated, obtained, or reviewed during the course of the assessment. The assessment files are maintained by the assessing organization during the course of the assessment. The assessment files should allow after-the-fact reconstruction of the overall assessment process, from planning the assessment scope through final resolution of deficiencies based on corrective action documentation.

### **2.5.2 Notebooks**

Each assessing organization should issue their assessors a controlled notebook for the purpose of recording observations and notes. The assessment notebooks should be used to record all relevant information and observations during an on-site assessment. The assessment notebooks should be written legibly in ink. Either the original notebooks, or copies of the notebooks, should be provided to Navy.

## **2.6 Report**

The report should include the following information, as appropriate to the individual assessment:

- Date(s) and location(s) of the assessment
- Identification of assessment team members and observers
- Identification of opening meeting and exit brief participants
- Identification of persons interviewed or contacted during assessment (by name or title)
- All deficiencies or observations noted (see Section 2.6.1 and Section 2.6.2, below)
- Discussions held with sampling personnel and any corrective actions taken
- Unresolved questions from the Contractor
- Health and safety protocols and level of protection used
- General quality of the work observed
- Comments on overall adherence to the approved work plans

### **2.6.1 Deficiencies**

Deficiencies identify those practices or procedures that represent a departure from scientifically sound practices, or would adversely impact data quality, or contribute to poor documentation. The assessment report should provide a description of each deficiency in sufficient detail that the deficiency may be clearly understood by the reader. In addition, the requirement that is associated with each deficiency should be stated or referenced.

### **2.6.2 Observations**

Observations that reflect on the project but are not serious enough to constitute a deficiency should be documented in the observations section of the report.

## **2.7 Report Issuance**

The assessment report, signed and distributed by the lead assessor, should be issued to the requestor (EFD/EFA or Contractor) within seven calendar days of completion of the on-site assessment. The lead assessor should review and approve the final version of the assessment report to ensure that the report is complete and accurate. The EFD/EFA should receive copies of all field assessments performed on Navy IR projects.

## **2.8 Action Resulting from the Assessment Report**

The action to be taken in response to the information provided in the assessment report shall be at the discretion of the EFD/EFA.

**Appendix G**  
**Attachment 1**  
**Field Assessment General Information**

## Field Assessment General Information

Project Name:	
Address:	
Facility Contact and Phone Number:	
Sampling Team:	
Affiliation:	
Address & Phone Number:	
Sampling Personnel:	
Field Assessment Personnel	
Affiliation:	
Date(s) of Assessment:	
Checklist enclosure(s) completed for this overview:	
1. <input type="checkbox"/> 2. <input type="checkbox"/> 3. <input type="checkbox"/> 4. <input type="checkbox"/> 5. <input type="checkbox"/> 6. <input type="checkbox"/> 7. <input type="checkbox"/> 8. <input type="checkbox"/>	
Key:	
1. General Procedures	5. Waste Sampling
2. Groundwater Sampling	6. Storm Water Sampling
3. Soil and Sediment Sampling	7. Air Sampling
4. Surface Water Sampling	8. Potable Water Sampling

**Appendix G**  
**Attachment 1, Enclosure 1**  
**General Procedures Checklist**

## General Procedures

1. Type of samples collected:	
<b>List:</b>	
2. Were sampling locations properly selected?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
3. Were sampling locations adequately documented in a bound field logbook using indelible ink?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
4. Were photos taken and a photolog maintained?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
5. What field instruments were used during this study?	
<b>List:</b>	
6. Were field instruments properly calibrated and calibrations recorded in a bound field logbook?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
7. Was sampling equipment properly wrapped and protected from possible contamination prior to sample collection?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	

8. Was sampling equipment constructed of Teflon®, polyethylene, glass, or stainless steel?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
9. Were samples collected in appropriate order (e.g. least suspected contamination to most contaminated)?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
10. Were clean disposable latex or vinyl gloves worn during sampling?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
11. Were gloves changed before each sample?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
12. Was any equipment field cleaned?	Yes <input type="checkbox"/> No <input type="checkbox"/>
13. Type of equipment cleaned:	
<b>List:</b>	
<b>Comments:</b>	
14. Were proper cleaning procedures used?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	

15. Were equipment rinse blanks collected after field cleaning?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
16. Were proper sample containers used for samples?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
17. Were split samples offered to the regulatory agency representative?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
18. Was a receipt for samples form given to regulatory agency representative?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
19. Were any duplicate samples collected?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
20. Were samples properly field preserved?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
21. Were preservative blanks utilized?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	

22. Were field and/or trip blanks utilized?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
23. Were samples adequately identified with labels or tags?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
24. Were coolers sealed with custody seals after collection?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
25. Were security measures used to insure custody of the samples after collection?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
26. Were chain-of-custody and receipt for samples forms properly completed?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
27. Were any samples shipped to a laboratory?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
28. If yes to # 27, were samples properly packed?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	

29. What safety monitoring equipment, protection and procedures were used prior to and during sampling?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>List:</b>	
30. Was safety monitoring equipment properly calibrated and were calibrations recorded in a bound field log book?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
31. Other comments or observations:	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	

**Appendix G**  
**Attachment 1, Enclosure 2**  
**Groundwater Sampling Checklist**

## Groundwater Sampling

1. Type of wells sampled? (monitoring, potable, industrial, <i>etc.</i> )	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>List:</b>	
2. Were wells locked and protected?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
3. Were identification marks and measurement points affixed to the wells?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
4. What were the sizes and construction materials of the well casings?	
<b>List:</b>	
<b>Comments:</b>	
5. Were the boreholes sealed with a concrete pad to prevent surface infiltration?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
6. Was there a dedicated pump in the well?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	

7. Was clean plastic sheeting placed around the wells to prevent contamination of sampling?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
8. Were total depth and depth to water determined before purging?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
9. What device was used to determine depth?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
10. Were measurements made to the nearest 0.01 ft.?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
11. Was the measuring device properly cleaned between wells?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
12. Was the standing water volume in each well determined?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	

13. How was the volume determined?	
<b>Comments:</b>	
14. Was a sufficient volume purged prior to sampling?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
15. What was done with the purged water? Was it collected for proper disposal, containerized until characterized or sent to an approved treatment facility?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
16. How many volumes?	
<b>List:</b>	
17. How was the purged volume measured?	
<b>Comments:</b>	
18. What was the method of purging?	
<b>Comments:</b>	

19. Were pH, conductivity, temperature, turbidity, and dissolved oxygen measurements taken and recorded during well-purging activities?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
20. Were pH, conductivity, temperature, turbidity, and dissolved oxygen readings stable prior to sampling?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
21. How many wells were sampled?	<input type="checkbox"/> Up gradient <input type="checkbox"/> Down gradient
<b>Comments:</b>	
22. How were the samples collected?	<input type="checkbox"/> Bailer <input type="checkbox"/> Pump <input type="checkbox"/> Other:
<b>Comments:</b>	
23. If pump was used, what type?	
<b>List:</b>	
<b>Comments:</b>	

24. If a pump was used, was it properly cleaned before and/or between wells?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
25. What were the cleaning procedures?	
<b>List:</b>	
26. Did bailers have polytetrafluoroethylene (PTFE)-coated wire leaders to prevent rope from coming into contact with water?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
27. Were bailers open or closed top?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
28. Was a clean bailer and new leaders used at each well?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
29. Were samples properly transferred from the sampling device to the sample containers? ( <i>i.e.</i> ,	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	

30. Was pH of preserved samples checked to insure proper preservation?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
31. Were samples iced immediately after collection?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
32. For what analyses were the samples collected?	
<b>List:</b>	
<b>Comments:</b>	
33. If samples were split, what were the sample/station numbers?	
<b>List:</b>	
<b>Comments:</b>	
34. If samples were split, were they blind to the laboratory on the chain-of-custody form?	
<b>Comments:</b>	

35. Other comments or observations:	
<b>Comments:</b>	

**Appendix G**  
**Attachment 1, Enclosure 3**  
**Soil and Sediment Sampling Checklist**

## Soil and Sediment Sampling

1. Type of samples collected:	
<b>List :</b>	
<b>Comments:</b>	
2. General sample description:	
<b>Comments:</b>	
3. How many samples were collected?	Number:
<b>Comments:</b>	
4. Were background and/or control samples collected?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
5. Were representative samples collected?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	

6. Were grab or composite samples collected?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
7. Were composite samples areal or vertical?	<input type="checkbox"/> areal <input type="checkbox"/> vertical
<b>Comments:</b>	
8. How many aliquots were taken for the composite sample?	Number:
<b>Comments:</b>	
9. What procedures and equipment were used to collect samples?	
<b>Comments:</b>	
10. Were samples thoroughly mixed prior to putting them into the sample containers?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
11. Were samples properly placed into sample containers?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	

12. Were samples chilled with ice water immediately after collection?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
13. For what analyses were the samples collected?	
<b>Comments:</b>	
14. If samples were split, what were the sample/station numbers?	
<b>List:</b>	
<b>Comments:</b>	
15. If samples were split, were they blind to the laboratory on the chain-of-custody form?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
16. Was a drilling rig, backhoe, <i>etc.</i> , used to collect soil samples?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
17. What was done with the soil cuttings from the drill rig or backhoe?	
<b>Comments:</b>	

18. Were the cuttings collected for proper disposal, or containerized until characterized?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
19. Were the drilling rig, backhoe, <i>etc.</i> , properly cleaned prior to arriving on site?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
20. What was the condition of the drilling and sampling equipment when it arrived on site? (cleanliness, leaking jacks, peeling paint)?	
<b>Comments:</b>	
21. Was a decontamination area located where the cleaning activities would not cross-contaminate clean and/or drying equipment?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
22. Was clean equipment properly wrapped and stored in a clean area?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
23. Was the drilling rig(s) properly cleaned between well borings?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	

24. Were the cleaning and decontamination procedures conducted in accordance with the project plans?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
25. Other comments or observations	
<b>Comments:</b>	

**Appendix G**  
**Attachment 1, Enclosure 4**  
**Surface Water Sampling Checklist**

## Surface Water Sampling

1. Type of samples collected?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
2. General sample description	
<b>Comments:</b>	
3. How many samples were collected?	Number:
<b>Comments:</b>	
4. Were background and/or control samples collected?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
5. Were grab or composite samples collected?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
6. How many aliquots were taken for the composite sample?	
<b>Comments:</b>	
7. What procedures and equipment were used to collect the samples?	
<b>Comments:</b>	
8. Were samples collected directly into sample containers?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
9. Did the sampler wade in the stream to collect the samples?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
10. Were the samples collected upstream from the sampler?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	

11. Did the sampler insure that roiled sediments were not collected along with the water samples?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
12. Were representative samples collected?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
13. Was the pH of preserved samples checked to insure proper preservation?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
14. Were samples chilled with iced water immediately after collection?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
15. For what analyses were the samples collected?	
<b>Comments:</b>	
16. If samples were split, what were the sample/station numbers?	
<b>List:</b>	
<b>Comments:</b>	
17. If samples were split, were they blind to the laboratory on the chain-of-custody form?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
18. Other comments or observations:	
<b>Comments:</b>	

**Appendix G**  
**Attachment 1, Enclosure 5**  
**Waste Sampling Checklist**

## Waste Sampling Checklist

1. Type of samples collected (oil, sludge, waste, wipe, chip, sweep)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
<b>Comments:</b>		
2. Description of containers or sources sampled:		
<b>Comments:</b>		
3. How many samples were collected?		
<b>Comments:</b>		
4. What type of equipment was used to collect the samples?		
<b>Comments:</b>		
5. What procedures were used to collect the samples?		
<b>Comments:</b>		
6. For what analyses were the samples collected?		
<b>Comments:</b>		
7. If samples were split, what were the sample/station numbers?		
<b>Comments:</b>		

8. If samples were split, were they blind to the laboratory on the chain-of-custody form?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
9. Were any special safety measures taken during collection of the samples?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
10. What level of safety protection was required for collection of the samples?	
<b>Comments:</b>	
11. Other comments or observations:	
<b>Comments:</b>	

**Appendix G**  
**Attachment 1, Enclosure 6**  
**Storm Water Sampling Checklist**

## Storm Water Sampling

1. Was outfall sampling point selection appropriate?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
2. Was visual monitoring conducted and recorded?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
3. Did the rainfall event produce a minimum of 0.1 inches of rain?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
4. Was the rainfall event preceded by a period of at least 72 hours during which no more than 0.1 inches of rain occurred?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
5. Was it a "normal" rainfall event (duration and total rainfall not more than 50% of the average storm event)?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
6. Was runoff produced?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
7. Types of samples collected (grab, flow-weighted composite)?	
<b>Description:</b>	
<b>Comments:</b>	

8. Were grab samples collected within the first 30 minutes after the on-set of runoff?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
9. If grab samples were not obtained during the first 30 minutes, were they at least collected within the first 60 minutes of discharge?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
10. What analytical procedures are going to be conducted on the grab samples?	
<b>Description:</b>	
<b>Comments:</b>	
11. Were flow-weighted samples properly prepared (even time intervals)?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
12. What was the time duration over which the composite samples were obtained?	
<b>List:</b>	
<b>Comments:</b>	
13. Were composite samples composed of at least three discrete samples taken in each hour for the first three hours of discharge, or the entire storm if less than three hours in duration, with each sample being separated by minimum of 15 minutes?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	

14. How was flow rate determined?	
<b>Description:</b>	
<b>Comments:</b>	
15. How was rainfall amount determined?	
<b>Description:</b>	
<b>Comments:</b>	
16. What analytical procedures will be conducted on the flow-weighted composited samples?	
<b>Description</b>	
<b>Comments:</b>	
17. What procedures and equipment were used to collect the samples?	
<b>Description</b>	
<b>Comments:</b>	
18. Were representative samples collected?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	

19. Was adequate information recorded to document the sampling event?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
20. Was the pH of preserved samples checked to insure proper preservation?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
21. Were samples chilled with ice water immediately after collection?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
22. If samples were split, what were the sample/station numbers?	
<b>Description:</b>	
<b>Comments:</b>	
23. If samples were split, were they blind to the laboratory on the chain-of-custody form?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
24. Other comments or observations:	
<b>Comments:</b>	

**Appendix G**  
**Attachment 1, Enclosure 7**  
**Air Sampling Checklist**

## Air Sampling

1. Is there a list of the air monitoring and meteorological stations?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
2. Is there a map(s) showing the location of air monitoring and meteorological stations?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
3. Is there a Contingency Plan addressing sampling failures caused by unpredicted meteorological delays?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
4. Does the sampling network agree with the project plan?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
5. Are there planned or required QC/QA samples scheduled?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
6. What are the contaminants of concern?	
<b>List:</b>	
<b>Comments:</b>	

7. What are the types of data collected (particulate, gaseous, meteorological, <i>etc.</i> )?	
<b>Description:</b>	
<b>Comments:</b>	
8. Are there project-specific SOPs for sampling?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
9. Are the correct methods being performed?	Yes <input type="checkbox"/> No <input type="checkbox"/>
10. What type(s) of air monitoring equipment are used?	
<b>Comments:</b>	
11. How many air monitoring stations are there?	Number:
<b>Comments:</b>	
12. Is there a data recording, reporting, and required data CoC plan?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
13. Are the air monitoring instruments locked and protected?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
14. Are there air monitoring calibration SOPs?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	

15. Are the air monitoring instruments calibrated?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
16. Are calibration data and instrument serial numbers recorded in a log book?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
17. What meteorological data are being collected?	
<b>Comments:</b>	
18. How many meteorological stations are there?	Number:
<b>Comments:</b>	
19. Are the wind speed and direction sensors located at the recommended height in meters?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
20. What is the duration for wind speed and direction readings?	
<b>List:</b>	
<b>Comments:</b>	
21. Are the meteorological instruments calibrated?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	

22. Are calibration data and instrument serial numbers recorded in a log book?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
23. Are any air monitoring or meteorological stations located where the data collected could be biased?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
24. Did the sampling time and total sample volume collected provide sufficient sample for analysis that meets the required detection limits?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
25. Other comments or observations:	
<b>Comments:</b>	

**Appendix G**  
**Attachment 1, Enclosure 8**  
**Potable Water Sampling Checklist**

## Potable Water Sampling

1. Did the sampling team verify that the sample tap was not located after a household purification and/or conditioning system?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
2. Were name(s) of the resident or water supply owner/operator, mailing address, and phone number obtained by the field sampling team?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
3. Was clean plastic sheeting placed around the sampling point to prevent contamination of sampling equipment and containers?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
4. What were the preparatory purging procedures?	
<b>Comments:</b>	
5. Were aerator, strainer, and hose attachments removed from the tap prior to sampling?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
6. Were pH, specific conductance, and temperature readings stable prior to sampling? (pH $\pm$ 0.2 units, specific conductance $\pm$ 10%, temperature $\pm$ 0.5°C)	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	

7. Were the samples collected directly into the sample container?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
8. Were clean gloves used for each sampling location?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
9. How many taps were sampled?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
10. If dissolved metals are a parameter of concern, were the samples filtered in the field prior to preservation?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
11. Was the pH of preserved samples checked to insure proper preservation, and was this check completed without contaminating the sample? ( <i>i.e.</i> , pH test strips must not be put into the sample container)	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
12. Were samples iced immediately after collection?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
13. For what analyses were the samples collected?	
<b>Comments:</b>	

14. If samples were split, what were the sample/station numbers?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
15. If samples were split, were they blind to the laboratory on the chain-of-custody form?	Yes <input type="checkbox"/> No <input type="checkbox"/>
<b>Comments:</b>	
16. Other comments or observations:	
<b>Comments:</b>	